L 13351-63

ACCESSION NR: AP3002625

carbon atom of the carbonyl group to the electron-donor phosphorus atom in the phosphine molecule with the subsequent rearrangement of the intermediate complex. The theory is advanced that, in the reactions investigated, the increase in reactivity of phosphines substituted by methyl groups is connected with the fact that the weakly localized electron pair of the C-H bond in the methyl group at phosphorus reacts with 3rd-orbitals of the latter. This increases the electron-donor properties of phosphorus and hence facilitates the reaction with the electrophilic atom of the carbonyl group. Orig. art. has: 2 tables and 1 formula.

ASSOCIATION: none

SUBMITTED: 22Jun62 DATE ACQ: 20Jul63 ENCL: 00

SUB CODE: CH NO REF SOV: 003 OTHER: 004

Card 2/2

ACCESSION NR: AP5011678 UR/0195/65/006/002/0198/0202
541.124

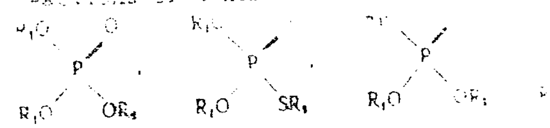
[illegible] K. A.; Skripech, T. K.; Baranayev, M. K.; Rodionova, N. P. (De-[illegible]

[illegible] ester derivatives of phosphoric and [illegible] hydroxyl ions

[illegible] kataliz, v. 6, no. 2, 1965, 198-202

[illegible] insecticide, phosphoric acid, [illegible] reaction [illegible] mechanism, [illegible]

ABSTRACT: Quantitative studies of the reaction ability of ester derivatives of phosphoric and thiophosphoric acids (POS) were carried out in order to extend the currently available information on the inhibiting effect of phosphorganic insecticides on cholinesterase (Ch). Rate constants, activation energies, and preexponen- [illegible] reactions of a number of structurally [illegible] POS [illegible] general form:



where $R_1 = -CH_3, -C_2H_5, -C_3H_7$; $R_2 = -C_2H_5, -C_2H_4SCH_3$

$K_1 = \frac{2,3}{t} \cdot (2 - \lg a)$, where t is the time and a the percentage concentration of inhibitor.

FOS. The second order rate constants were determined from $K_{II} = \frac{K_I}{(OH)} = \frac{K_I}{0.025}$.

[illegible] explained as a nucleophilic [illegible]

[illegible] (J. Chem. Soc., 1[illegible]

were found to change with change in the structure of FOS. [illegible]

Yakovlev for helpful advice concerning the inhibition mechanism of cholinesterase.

Orig. art. has: 1 table and 3 equations.

ASSOCIATION: none

SUBMITTED: [illegible] Feb61

ENCL: 00

SUB CODE: [illegible]

NO REF SOV: [illegible]

OTHER: [illegible]

Card 2/2

POLEKHIN, A.M.; BARANAYEV, M.K.; LOSHADKIN, N.A.; MARKOV, S.M.

Simple method of calculating the reaction rate [illegible]

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000103430001-9"

L 23588-65 EWG(j)/EWT(m)/EPF(c)/EPR/EWP(t)/EWP(b) Pr-4/Pe-4 IJP(c)
JD/JG

ACCESSION NR: AP5001273 S/0089/64/017/006/0502/0503

AUTHOR: Baranayev, M. K.; Vereskunov, V. G., Zakharov

TITLE: [illegible] of ruthenium dioxide in the presence of chromic oxide

SOURCE: Atomnaya energiya, v. 17, no. 6, 1964, 502-503

TOPIC TAGS: ruthenium oxide, ruthenium dioxide, ruthenium, nuclear fission, waste product, thermochemical conversion, [illegible] oxide catalyst, chromic oxide

ABSTRACT: The process of conversions which take place on heating mixtures of ruthenium and chromium hydroxides has been studied by thermogravimetrical analysis and x-ray structural analysis. A similar process occurs in the heat treatment of waste products of industrial fission, which contain Ru^{106} and corrosion products [illegible] from [illegible]. The end product of thermochemical conversions [illegible] is [illegible]. Volatilization of Ru as [illegible] means of [illegible] window counter with [illegible] a [illegible] dried sample. Thermogram [illegible]

Card [illegible]

L 23588-65

ACCESSION NR: AP5001273

analysis indicated that an exothermic effect at 410C with pure ruthenium hydroxide corresponded to the transition of RuO_2 from the amorphous into the crystalline phase, and that volatilization of [illegible] at [illegible] oxidation of RuO_2 to RuO_4. An exothermic effect at 490C of amorphous into crystalline chromium oxide was also established in pure chromium hydroxide. However, no exothermic [illegible] determined in [illegible] - $Cr(OH)_3$ mixtures and volatilization [illegible] when the mixture was heated in air. The mixture in a nitrogen atmosphere produced volatilization of [illegible] temperature [illegible] because of the disproport[illegible] [illegible] It was concluded that [illegible] a catalyst in the oxidation of RuO_2 by atmospheric oxygen, [illegible] the temperature of oxidation.

ASSOCIATION: none

SUBMITTED: 16Mar64 ENCL: 00 SUB CODE: IC, GC

NO REF SOV: 002 OTHER: 002 ATD PRESS: 3171

Card 2/2

GR[illegible]OV, L.A.; BA[illegible]EV, L.K.

Reply to V.V. Tarasov's remarks. Izv.vys.ucheb.zav.;khim.i khim.tekh. 4 no.3:520 '61. (MIRA 14:10)
(Liquids)
(Tarasov, V.V.)

L 10714-67 EWT(1) SCTB DD

ACC NR: AP6023340 (A,N) SOURCE CODE: PO/0069/66/000/004/0277/0280

21

AUTHOR: Barancewicz, Edmund Michal (Lieutenant Colonel, Doctor)

ORG: Military Institute of Flight Medicine (Wojskowi Instytut Medycyny Lotniczej)

TITLE: Effect of a parachute jump on a man's organism

SOURCE: Lekarz wojskowy, no. 4, 1966, 277-280

TOPIC TAGS: flight physiology, aeromedicine, parachute, human physiology, human sense

ABSTRACT: The article reports on investigations of the psychophysical changes which take place in the human organism as a result of a parachute jump. 90 parachutists, both military and civil, in the 20 to 35 year old age group, were used as subjects. The behavior of the jumpers was observed, their pulse taken by the palpitation method and their arterial blood pressure by auscultation using the Rica-Rocci apparatus. The pulse and blood pressure measurements were taken before donning parachutes, while boarding the plane, and on board the plane in flight just before jumping (24 parachutists at a time). These pulse and blood pressure measurements were supplemented by others repeated on the subjects immediately after landing from the parachute jump and after a 30 minutes interval thereafter. The subjects were divided

Card 1/2

L 10714-67

ACC NR: AP6023340

into groups depending on the type of reaction investigated and namely; 1) type of nervous excitation; 2) kind of fears experienced; 3) type of depression experienced; 4) mixtures of the first three kinds of reaction. It is concluded that the changes which take place in the organism during a parachute jump result from the strong emotion and great physical effort brought about by the increased strain on the nervous system. Orig. art. has: 1 figure.

SUB CODE: 06/ SUBM DATE: 01Apr65/ ORIG REF: 005/ SOV REF: 001/ OTH REF: 001

Card 2/2

CZEZOWSKA, Zofia; BAZALA, Leon; BARANCEWICZ, Jadwiga

Use of nitrogen yperite in allergic bronchial asthma. Polski tygod. lek. 10 no.16:503-507 18 Apr 55.

1. Z Osrodka Astmologicznego w Szczawnie Zdroju i z I Kliniki Chorob Wewnetrznych we Wroclawiu, kierownik prof. dr Zofia Czezowska. Wroclaw, Wybrzeze Wyspianskiego 32 m. 4.

(ASTHMA, therapy,
nitrogen mustards)
(NITROGEN MUSTARDS, ther. use,
asthma)

BARANCHEYEV, L.N. [deceased]

Abundance and the elements of ecology of the capercaillie Tetrao urogalloides Midd. in Amur Province. Ornitologiia no.7:93-96 '65. (MIRA 18:10)

BARANCHEYEV, L. M.

Barancheyev, L. M. - "A method of early determination of the fertility of incubated eggs", Uchen. zapiski Blagoveshch. gos. ped. i uchitel. in-ta im. Kalinina, Vol. 111, 1948, p. 37-64, - Bibliog: 11 items.

SO: U-4110, 17 July 53, (Letopis 'Zhurnal 'nykh Statey, No. 19, 1949

BARANCHEYEV, L.M.

Ecological features of the distribution of the common pheasant (Phasianus colchicus Pallasi Rothsch) in the upper Amur Valley. Zool. zhur. 37 no.12:1904-1906 D '58. (MIRA 12:1)

1. Chair of Zoology, Blagoveshchensk State Pedagogical Institute. (Amur Valley--Pheasants)

SHUL'MAN, N.K.; ANDREYEVA, I.A.; PALENKO, I.A.; KOSITSYN, I.Ye.; TIL'BA, A.P.; BARANCHEYEV, L.M.; MOSKALENKO, A.V., red.; GOLOVIN, A.A., tekhn.red.

[Nature in Amur Province] Priroda Amurskoi oblasti. Blagoveshchensk, Amurskoe knizhnoe izd-vo, 1959. 308 p. (MIRA 13:4)

1. Amurskiy otdel Vsesoyuznogo geograficheskogo obshchestva (for all, except Moskalenko, Golovin).
(Amur Province--Geography)

BARANCHEYEV, L.M.

Nonperiodical mass migration of roe deer in Amur Province.
Migr. zhiv. no.3:26-36 '62. (MIRA 16:2)
(Amur Province--Roe deer)
(Amur Province--Animal migration)

BARANCHEYEV, L.M.

Biology of the reproduction of the bunting Emberiza aureola ornata Schulp. in Amur Province. Ornitologiia no.6:173-176 '63. (MIRA 17:6)

BARANCHEYEV, L.M.

Natural resources of the upper Amur Valley. Okhr. prir. na Dal'. Vost. no.1:45-50 '63. (MIRA 18:7)

1. Blagoveshchenskiy gosudarstvennyy pedagogicheskiy institut imeni Kalinina.

DROZDOV, N.A.; SEMIN, A.N.; FEDOTOV, I.I.; BARANCHEYEV, S.S.; KAMENEV, N.N.

[Location and automation of supply systems on railroads with diesel and electric traction] Razmeshchenie i avtomatizatsiia ekipirovochnykh ustroistv pri elektrovoznoi i teplovoznoi tiage. Moskva, Vses.izd-ko poligr. ob"edinenie m-va putei soob., 1960. 73 p. (Moscow. Vsesoiuznyi nauchno-issledovatel'skii institut zheleznodorozhnogo transporta. Trudy, no.199). (MIRA 13:9)

(Railroads—Equipment and supplies)

ZHARKOVA, L.A.; BARANCHEYEVA, N.G.

Thermodynamic properties of $MeMoO_3$-type compounds. Part 1.
Zhur. fiz. khim. 38 no.3:752-754 Mr '64. (MIRA 17:7)

1. Moskovskiy gosudarstvennyy pedagogicheskiy institut imeni V.I. Lenina.

BARANCHIK, N.

"On the Equivalence of Chemical Bonds of Polyvalent Atoms,"
Dok. AN , 34, No. 3, 1942 Radium Inst. Dept. Chem. Sci.
Acad. Sci.

BARANCHIK, N. M.

4

Structure and transformations of *N*-nitrotriazenes. I. Diaryl-*N*-nitrotriazene. N. M. Baranchik, L. V. Grachev, and D. Z. Zavel'skii. *Zhur. Obshchei Khim.* 23, 1572–8 (1953); *C. A.*, *C.A.* 42, 5866*d*; 43, 169*g*.—To 1.6 g. $PhN:NO_2Na$ in 25 ml. H_2O and 25–40 ml. acetate buffer soln. (pH 6; 125 g. KOAc and 30 ml. AcOH per 250 ml.) at 5° was added in 15 min. a soln. of 0.01 mole ArN_2Cl (freed of excess HNO_2 and excess HCl) with the pH of the mixt. maintained at 4.8–5.8 by addn. of $KHCO_3$ or KOAc; the reaction was essentially complete in several hrs. and yielded a solid brown ppt. which could not be recrystd. without decompn. Condensation of p-$O_2NC_6H_4N_2Cl$ with $PhN(NO_2)H$ gave p-$O_2NC_6H_4N(NO_2)H$, yellow, m. 110–11°; 4,2-$Cl(O_2N)C_6H_3N_2Cl$ gave *4,2-Cl(O₂N)C₆H₃N(NO₂)H*, m. 107–8°; *2,4-Cl(O₂N)C₆H₃N₂Cl* similarly gave *2,4-Cl(O₂N)* *isomer*, m. 92–3°; PhN_2Cl gave some 30% PhOH. The filtrate, after isolation of the above-described ppt. in the reaction of 4,2-$Cl(O_2N)C_6H_3N_2Cl$, treated with an alkaline soln. of 2-$C_{10}H_7OH$ formed 1-phenylazo-2-naphthol, m. 130–1°. The results indicate that in all the reactions there is formed an unstable diaryl-*N*-nitrotriazene, R'N:NN(NO_2)R, which hydrolyzes to the various nitraminic acids (listed above), on the one hand, and ArN_2OH on the other hand, with transfer of the NO_2 group from one N atom of the triazene chain to the other one which was attached to a ring with electron-attracting substituents. The mechanism of such transfer is discussed and examples of similar isomerizations are cited. G. M. Kosolapoff

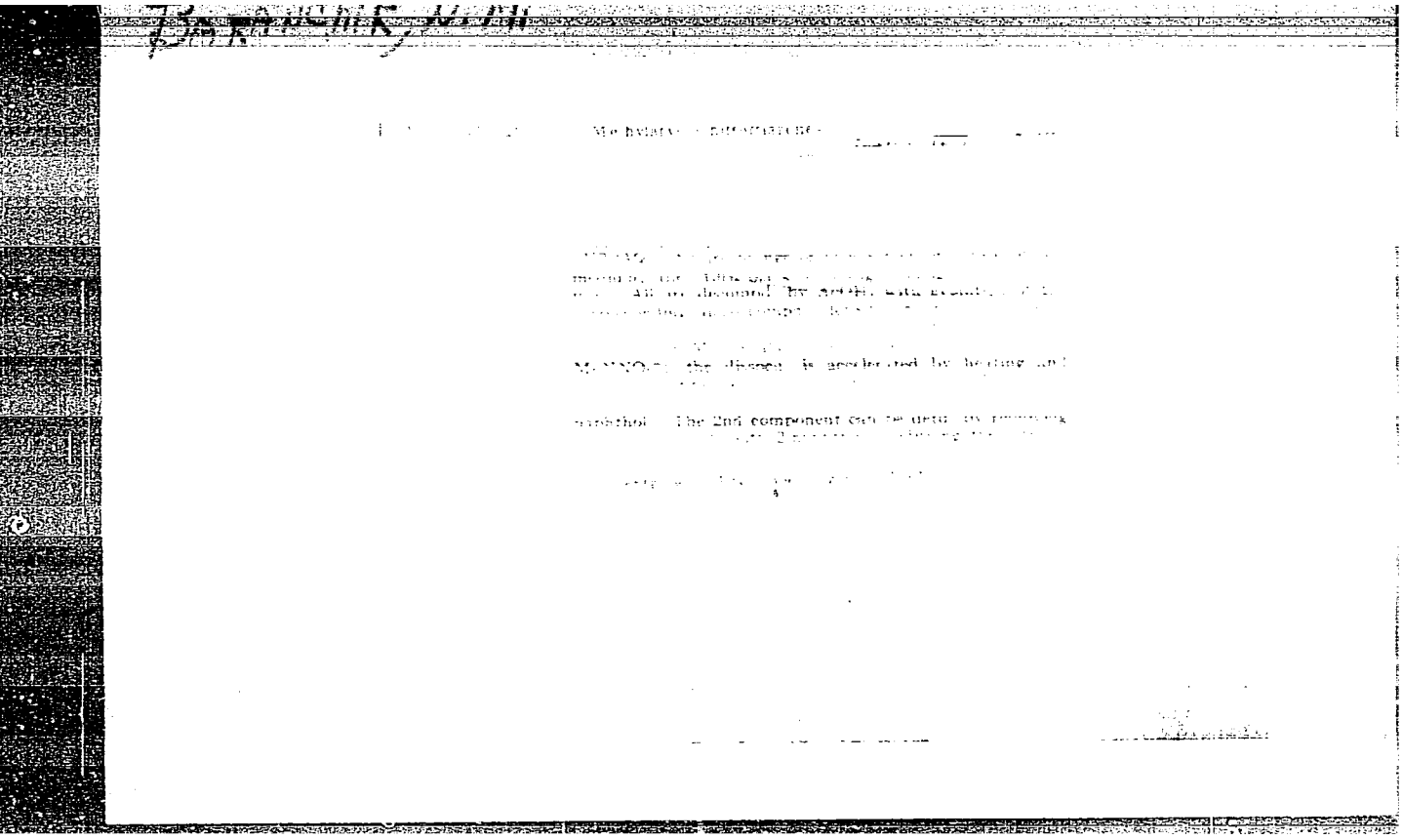
BARANCHIK, N. M.

62

Diaryl-N-nitrotriazene. N. M. Baranchik, I. V. Grachev, and D. Z. Zaver'shin. *Doklady Akad. Nauk S.S.S.R.* 89, 1007–9(1953); cf. G., *C.A.* 43, 5968b.—Addn. of 0.01 mole diazonium salt soln. and 2 equivs. HCl to a strongly buffered (pH 5–6) soln. of 0.01 mole Na salt of phenylnitraminic acid gave a ppt., the formation of which was complete after several hrs. The filtrate was extd. with Et_2O, then acidified with HCl, again extd. with Et_2O, and the ext. evapd., giving the desired product. In all cases tried the products gave the Lieberman test characteristic of nitraminic acids and are rather strong acids. The product obtained from p-$O_2NC_6H_4N_2Cl$ was identified as *p-nitrophenylnitraminic acid*, m. 110–11°, that from 4,2-Cl-(O_2N)$C_6H_3N_2Cl$ as *4-chloro-2-nitrophenylnitraminic acid* (I), m. 107–8°, and from 2,4-Cl(O_2N)$C_6H_3N_2Cl$ as the *4-nitro-2-chloro isomer*, m. 92–3°, of I. The ppt. formed in the initial reaction could not be identified, as it was either insol. or decompd. on attempted purification. It is believed that the reaction sequence is: $XC_6H_4N_2OH + PhNHNO_2 \rightarrow XC_6H_4N{:}NN(NO_2)Ph \xrightarrow{H_2O} XC_6H_4NHNO_2 \rightarrow PhN_2OH$. Thus a new type of transfer of an NO_2 group from a triazene N to another N connected to a more neg. aryl group is observed.

G. M. K.

(2)



AUTHORS: Baranchik, N. M.; Grachev, I. V.; and Zavel'skiy, D. Z.

TITLE: Formation and Conversions of N-Nitrotriazenes. Part 2. Methylaryl-N-nitrotriazenes (Stroyeniye i prevrashcheniya N-nitrotriazenov. II. Metilaril-N-nitrotriazeny)

PERIODICAL: Zhurnal Obshchey Khimii, 1957, Vol. 27, No. 1, pp. 117-126 (U.S.S.R.)

ABSTRACT: In order to obtain N-nitrotriazenes and to make certain that the diaryl-N-nitrotriazenes are perfectly labile it was necessary to condense diazo-compounds with methyl-N-nitramine to obtain more stable methylaryl-N-nitro-triazenes. Methylaryl-N-nitrotriazenes, in contrast to the already known trizens, can be combined with beta-naphthol in an alcohol solution in the absence of acid. This phenomenon is explained by the highly electrophilic nature of the nitro-group bound with the nitrogen of the little triazene chain. Methylaryl-N-nitrotriazenes appear in the form of luminous powders with shades of sandy and faintly pinkish to brownish tinges showing a fine crystalline structure under the microscope. Recrystallization from organic solvents such as alcohol, benzene, ether, etc. does not serve the purpose because in these conditions N-nitrotriazenes, especially when heated, decompose with the liberation of a gas, -diazonitrogen or nitrous oxide. The latter is formed as a

result of decomposition of the separated methylnitramine. Methylaryl-N-nitrotriazenes have the same characteristics as real diazoamino compounds; when dissolved and heated in ice-cold acetic acid containing a small amount of alpha-naphthylamine, they produce a bright color as a result of splitting into basic components from which the diazo radical combines itself with the alpha-naphthylamine forming a homologous azo-crystal. The storageability of these triazenes is low and depend upon their structure. Three tables. There are 14 references, of which 7 are Slavic.

ASSOCIATION:

PRESENTED BY:

SUBMITTED: February 10, 1956

AVAILABLE:

Card 2/2

AUTHORS: Baranchik, N. M., Grachev, I. V. (Deceased), 79-28-5-53/69
Zavel'skiy, D. Z.

TITLE: Structure and Conversions of the Methylaryl-N-Nitrotriazenes (Stroyeniye i prevrashcheniya metilaril-N-nitrotriazenov).
III. On Some Properties of the Methylaryl-N-Nitrotriazenes (III O nekotorykh svoystvakh metilaril-N-nitrotriazenov)

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol. 28, Nr 5, pp. 1340-1351 (USSR)

ABSTRACT: In continuation of earlier works by the authors (refs 1-3) on the properties of the methylaryl-N-nitrotriazenes with regard to the cleavage of these compounds into the initial products in acidous and neutral medium, it was determined in this paper that, different from the N-sulfo acids of methylaryltriazenes which split off their sulfo group in the acidous medium, the N-nitrosubstituted methylaryltriazenes do not separate the nitrogroup on the same conditions, but are decomposed to phenol, nitrogen, alcohol and nitrous oxide. The reaction process is explained by the greater polarity of the binding between nitrogen and sulfur

Card 1/3

compared to that between the two nitrogen atoms. It was shown that the methylaryl-N-nitrotriazenes have the properties of pseudo acids. They dissolve in lyes and basic solvents with strongly increased coloring. When these solutions are left standing, they decompose into [illegible]glazine, nitrogen and formaldehyde. An interpretation of the reaction mechanism of their cleavage in alkaline media is proposed, according to which, in the beginning, the proton splits off from the methyl group under the action of the hydroxyl or the methoxyl; then it is supposed to form into an unstable carbeniate anion which further / converts into the N-methylene derivative of aryltriazene by splitting off of the nitro-group in the form of a nitrite anion. It is shown that the proposed mechanism explains well the reactions of various aliphatic N-nitro- and C-nitro derivatives which take place in an alkaline medium with the splitting off of the nitro-group in the form of a nitrite anion and with intermolecular regrouping of the bindings. It is also shown that such reactions must be classified to the known class of nucleo-

Structure and Conversions of the Methylaryl-N-Nitro- 79-28-5-53/69
triazenes.
III. On Some Properties of the Methylaryl-N-Nitrotriazenes

philic cleavage reactions. There are 3 tables and 16 references, 5 of which are Soviet.

SUBMITTED: May 3, 1957

Card 3/3

L 19185-63 EWT(d)/EWP(k)/EWP(q)/EWT(m)/BDS AFFTC/ASD Pf-4 JD/HW/JG
ACCESSION NR: AR3004206 S/0276/63/000/005/V053/V053

69
67

SOURCE: RZh. Tekhnologiya mashinostroyeniya, Abs. 5V279

AUTHOR: Stukach, A. G.; Orlov, S. N.; Baranchikov, V. M.

TITLE: Temperature-velocity factor while pressing aluminum alloys

CITED SOURCE: Tr. N.-i i proyektno-konstrukt. in-ta gorn. i obogatit. mashinostr., sb. 2, 1960 (1961), 113-133

TOPIC TAGS: pressing aluminum alloy, temperature-velocity factor, drawing degree, pressed rod, duralumin, crack

TRANSLATION: Factors influencing thermal effect of deformation were investigated. A method of approximate calculation of thermal effect while pressing aluminum alloys is presented. Test methods are described for determining the effect of the degree of drawing on the thermal effect of deformation, temperature of the pressed billet and the container and the pressure speed during hot pressing of D-1 duralumin. Tests were carried out on a 1,000 t hydraulic press. Diameter of the container bushing was 115 mm. The drawing degree (ratio of cross section area of initial bar to the cross section area of the pressed product) was 10.2, 30 and 46.

Card 1/2

L 19185-63
ACCESSION NR: AR3004206

2

During tests the following were recorded: the force of pressing per move, surface temperature of the pressed rod at its exit from the matrix eye, and of the matrix temperature. Study of the quality of the pressed rods and analysis of their microstructure were also carried out. It was established that during pressing aluminum alloys of "duralumin" type the thermal effect is very high and may cause a 100° and more warming up of metal. At increasing speed of pressing the temperature of the metal piece constantly rises then from the front toward the rear end and from the center toward the periphery. Irrespective of pressing conditions (initial alloy temperature, container temperature, elongation degree and deformation speed) cracks on the pressed rod appear at a certain surface temperature of the product (for products made of D-1 and D-16 alloys at 480 to 490°); pressing of rods made of D-1 alloy at high running speeds (of the order of 50 m/min and more) at ordinary conditions leads to overheating of peripheral layers. During this time overheating appears later than cracks on the product. It often accompanies metal cracking but is not its primary cause. Fifteen figures, 2 references. S. Kolesnikov.

DATE ACQ: 21Jun63 SUB CODE: IE, MA ENCL: 00

Card 2/2

L 46984-66 EWT(m)/EWP(t)/ETI IJP(c) JH/JD

ACC NR: AT6024912 (A,N) SOURCE CODE: UR/2981/66/000/004/0037/0048

AUTHOR: Mikhaylov, K. N.; Kovrizhnykh, V. G.; Archakova, Z. N.; Baranchikov, V. M.; Sandler, V. S.; Shvets, V. A.

ORG: none

40 B+1

TITLE: Preparation of pressed semifinished products from VAD23 alloy

SOURCE: Alyuminiyevyye splavy, no. 4, 1966. Zharoprochnyye i vysokoprochnyye splavy (Heat resistant and high-strength alloys), 37-48

TOPIC TAGS: aluminum alloy, metal pressing, solid mechanical property / VAD23 aluminum alloy

ABSTRACT: In order to determine the possible applications of VAD23 alloy, the influence of various technological factors on its mechanical properties and structure was investigated. The optimum mechanical properties were found to be produced by pressing directly from an ingot which had first undergone homogenization. The optimum pressing temperature of sections with a flange thickness of 5 mm, 470-490°C, i. e., the temperature to which the blanks are heated, insures high strength characteristics and a comparatively good plasticity over the entire length of the section. The elongation per unit length of the sections is practically independent of the pressing temperature of the alloy and of the degree of primary recrystallization. A change in the pressing rate in the range of 0.5-5.0 m/min at pressing temperatures of 250-430°C does not af-

Card 1/2

RAKOVSKIY, V.Ye.; KOTKOVSKIY, A.P.; MAL', S.S.; PASTUKHOV, G.M.; BARANCHIKOVA, M.I.; VOLOSOVICH, N.S.; DROZHALINA, N.D.; KASHIRINA, S.V.; MAKEYEVA, G.P.

Results of testing a pilot unit for processing tar water. Trudy Inst. torfa AN BSSR 7:240-257 '59. (MIRA 14:1)
(Peat gasification) (Industrial wastes)

RAKOVSKIY, V.Ye.; KOTKOVSKIY, A.P.; MAL', S.A.; EL'KIND, L.B.; DROZHALINA, N.D.; BARANCHIKOVA, M.I.; VOLOSOVICH, N.S.

Separation of phenols in a continuous distillation of peat tar. Trudy Inst. torfa AN BSSR 7:187-197 '59. (MIRA 14:1)
(Peat) (Distillation, Fractional) (Phenols)

BARANCHIN, Kh., podpolkovnik

Coordination of tanks and artillery. Voen.vest. 40 no.10:22-24 O '60. (MIRA 14:5)

(Tank warfare)
(Artillery drill and tactics)

LEVITSKIY, S.M.; BARANCHUK, N.S.

Propagation of electromagnetic waves along a rod shaped plasma.
Izv.vys.ucheb.zav.; radiofiz. 3 no.4:725-726 '60. (MIRA 13:9)

1. Kiyevskiy gosudarstvenny universitet.
(Electromagnetic waves)
(Plasma (Ionized gases))

BARANCHIKOV, I. I.

Useful undertaking of the Glazov line-maintenance center. Vest. sviazi 18 no. 8:21-22 Ag '58. (MIRA 11:8)

1. Magistral'nyy lineynyy inzhener-instruktor Upravleniya mezhdugorodnoy telefonno-telegrafnoy svyazi Ministerstva svyazi RSFSR.
(Telephone lines--Maintenance and repair)

BARANCHIKOV, V.

Radio - Stations

Increasing the outlet power of the KRU-2 radio Station. Radio No. 3, 1953.

Monthly List of Russian Accessions, Library of Congress, June 1953. Uncl.

BARANCHUK, A. M.

The Committee on Stalin Prizes (of the Council of Ministers USSR) in the fields of science and inventions announces that the following scientific works, popular scientific books, and textbooks have been submitted for competition for Stalin Prizes for the years 1952 and 1953. (Sovetskaya Kultura, Moscow, No. 22-40, 20 Feb - 3 Apr 1954)

Name	Title of Work	Nominated by
Udachin, S. A. Cheshikhin, G. V. Prokuronov, N. I. Tsfasman, Ya. M. Burikhin, N. N. Baranchuk, A. M. Maslov, A. V. Gorokhov, G. I.	"Planning of Land Organization"	Moscow Institute of Land Management Engineers

SO: W-30604, 7 July 1954

85993

9.9845

S/141/60/003/004/019/019
E032/E314

AUTHOR: Levitskiy, S.M. and Baranchuk, N.S.

TITLE: On the Propagation of Electromagnetic Waves Along a Rod of Plasma

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, 1960, Vol. 3, No. 4, pp. 725 - 726

TEXT: Schumann, Faynberg and Gorbatenko (Refs. 1, 2) have shown that slow surface electromagnetic waves can be propagated along a cylindrical plasma rod. In the absence of a magnetic field the propagation of these waves is possible provided $\omega_o \gtrsim \omega \sqrt{1 + \varepsilon_D}$, where ω is the frequency of the VHF field, $\omega_o = \sqrt{4\pi e^2 N/m}$ is the natural frequency of the plasma and ε_D is the dielectric constant of the surrounding medium. The maximum retardation of the waves occurs for $\omega_o \simeq \omega \sqrt{1 + \varepsilon_D}$ since for larger values of ω_o/ω the phase velocity tends to c. Such slow waves were experimentally observed by Sinel'nikov and Zeydlits (Ref.3)

Card 1/3

On the Propagation of Electromagnetic Waves Along a Rod of Plasma

and Bittner (Ref. 4). The present authors report a quantitative comparison between theory and experiment. A long gas discharge tube having an outer diameter of 1.25 cm and an internal diameter of 1 cm and filled with saturated silver vapour was employed in the experimental part of this work. The cooled part of the envelope was kept at 40 - 60 °C. Measurements were carried out between 2 000 and 3 000 Mc/s. The results obtained on 2 000 Mc/s are shown in Fig. 1. As can be seen from Fig. 1, for low concentrations the curve tends asymptotically to the line marked 1 , which represents the concentration for which no propagation of the signal can occur. The line marked 2 corresponds to the concentration determined from the condition $\omega_o = \omega\sqrt{1 + \varepsilon_D}$, i.e. the theoretical limit for the propagation of electromagnetic waves. The dielectric

On the Propagation of Electromagnetic Waves Along a Rod of Plasma

constant ε_D of the glass was specially measured and was found to be 4.2. As can be seen, the theoretical limiting concentration is in good agreement with the experimentally measured value if ε_D is taken to be equal to the dielectric constant of the material surrounding the plasma.
There are 1 figure and 4 references: 2 Soviet and 2 German.

ASSOCIATION: Kiyevskiy gosudarstvennyy universitet
(Kiyev State University)

SUBMITTED: April 29, 1960

Card 3/3

9,4230
9,1300

33224
S/141/61/004/006/011/017
E192/E382

AUTHORS: Levitskiy, S.M. and Baranchuk, N.S.

TITLE: Investigation of the characteristics of a plasma waveguide

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, v. 4, no. 6, 1961, 1078 - 1088

TEXT: The paper was read at the conference of MV and SSO SSSR for radio-electronics, Khar'kov, 1960.
The paper gives some experimental and calculated data for a cylindrical plasma waveguide. The experiments were carried out by means of the equipment illustrated in Fig. 1. In this, Г represents the generator, B is a wavemeter and A is a fixed attenuator of 10 db. $И_1$ is a coaxial measuring line, which is used for determining the matching of the waveguide. The investigated plasma waveguide is in the form of a long, sealed-off gas-discharge tube Л ; which is situated inside a measuring line $И_2$ instead of the centre conductor. The principal unit of the gas-discharge tube is a calibrated glass tube having

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Investigation of ....

an internal diameter of 10 mm and external diameter of 12.5 mm. The tube is terminated with an anode having the form of a short cylinder made of Kovar. A DC discharge between the anode and a heated cathode is ignited and the electron concentration in that portion of the tube which is outside the measuring line can be measured by a cylindrical probe U3 and a flat surface probe П3. The tube can be filled wither with mercury vapour or with hydrogen. Excitation of the tube can be effected by connecting its anode to the coaxial supply cable through the excitation system СВ. This system can be in the form of a delta - transformer, which connects the anode directly to the central conductor of the coaxial cable. A cylindrical plasma waveguide with an axially symmetrical wave of TM-type is analyzed on the basis of equations derived in Ref. 1 (W.O. Schumann - Z.f. Naturforsch., 5a, 181, 1950) and an expression for its delay factor β is given. The factor was also measured experimentally at a frequency of 670 Mc/s and the results are shown in Fig. 4, where β is plotted as a function of the electron concentration n_e (measured in the vicinity of the tube wall; Curve 1 in the

Investigation of ....

figure is calculated under the assumption that the permittivity of the dielectric is $\varepsilon_{\Pi} = 4.2$; Curve 2 is for $\varepsilon_{\Pi} = 1$ for a tube with a screen, while Curve 3 is for $\varepsilon_{\Pi} = 1$ without the screen; Curve 4 was taken experimentally. The expression for the attenuation of the plasma waveguide is also derived and some experimental results are given. Some of these are shown in Fig. 6, where the attenuation coefficient α'' is plotted as a function of frequency (for $\beta = 6.5$ and a mercury-vapour pressure of 1.27×10^{-2} mm Hg). The wave impedance of the waveguide is also evaluated by employing the method of Ref. 13 (J.R. Pierce - Travelling-wave tubes, pubd. Sov. Radio, Moscow, 1952). Some measured and calculated results of the wave impedance as a function of the electron concentration for the frequency of 670 Mc/s are given and it is found that the measured and experimental data are in qualitative agreement. By comparing the experimental and calculated results it is concluded that the permittivity of the wall material of the cylindrical plasma waveguide, which is in close contact with the plasma, is of great

Investigation of ....

importance and that an accurate analysis of the waveguide should be based on formulae which take into account the irregularities of the dielectric surrounding the plasma. The attenuation in the waveguide is proportional to the gas pressure and increases with increasing frequency. Similarly, the wave impedance increases with frequency and becomes infinite at the critical frequency. There are 8 figures and 14 references: 11 Soviet-bloc and 3 non-Soviet-bloc. The English-language reference mentioned is: Ref. 5 - A.W. Trivelpice, R.W. Gould - J. Appl. Phys., 30, 1784, 1959.

ASSOCIATION: Kiyevskiy gosudarstvennyy universitet
(Kiyev State University)

SUBMITTED: February 6, 1961

Card 4/4

LEVITSKIY, S.M.; BARANCHUK, N.S.

Studying the properties of a cylindric plasma wave guide.
Izv.vys. ucheb. zav.;radiofiz. 4 no.6:1078-1088 '61.
(MIRA 14:12)

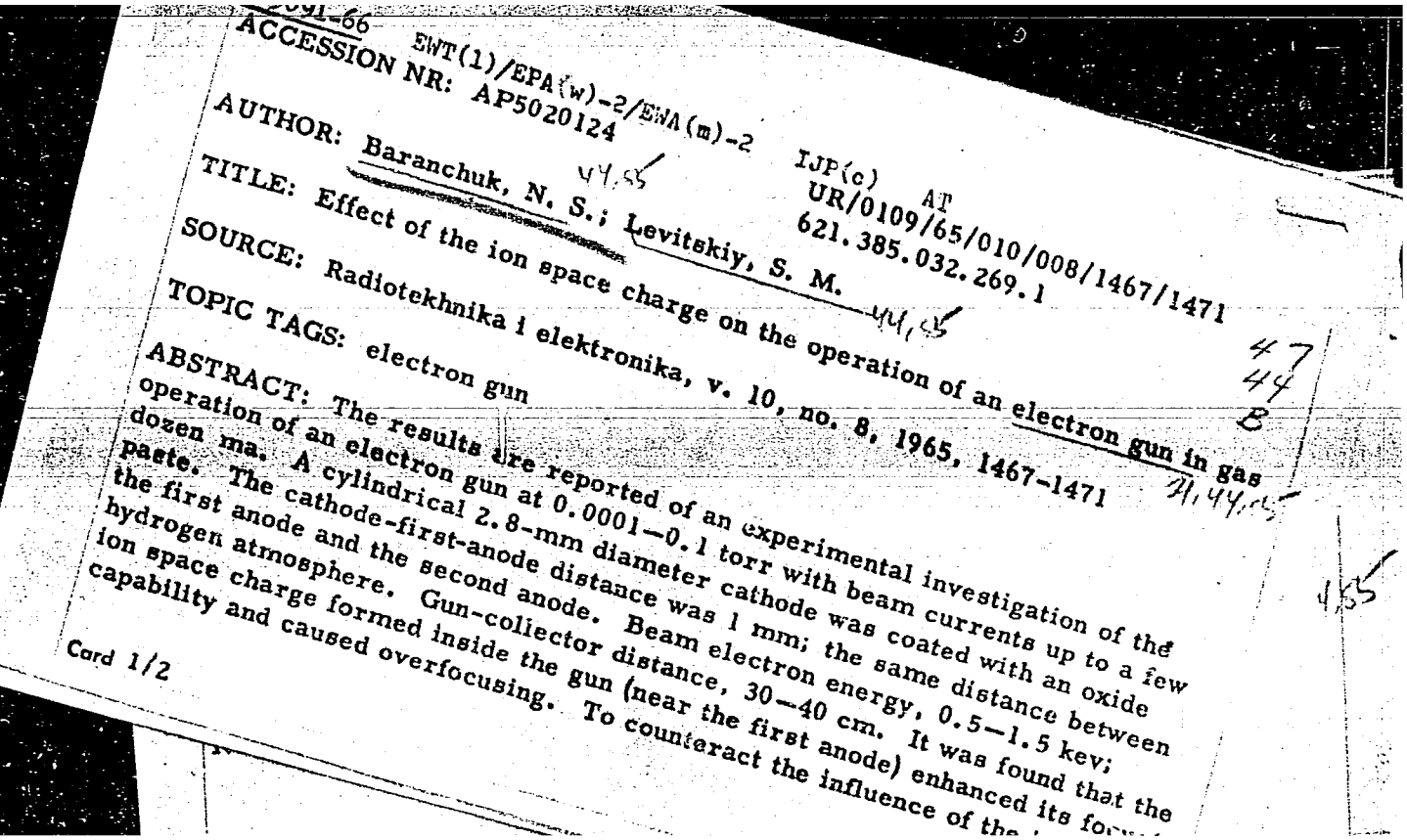
1. Kiyevskiy gosudarstvennyy universitet.
(Wave guide)
(Plasma(Ionized gases))

LEVITSKIY, S. M.; BARANCHUK, N. S.

Study of some properties of a delay system consisting of a helical guide surrounding a plasma rod. Izv. vys. ucheb. zav.; radiofiz. 5 no.5:972-977 '62. (MIRA 15:10)

1. Kiyevskiy gosudarstvennyy universitet.

(Plasma(Ionized gases)) (Wave guides)



EWT(1)/EPA(w)-2/EWA(m)-2 IJP(c) AT
ACCESSION NR: AP5020124 UR/0109/65/010/008/1467/1471
621.385.032.269.1

AUTHOR: Baranchuk, N. S.; Levitskiy, S. M.

TITLE: Effect of the ion space charge on the operation of an electron gun in gas

SOURCE: Radiotekhnika i elektronika, v. 10, no. 8, 1965, 1467-1471

TOPIC TAGS: electron gun

ABSTRACT: The results are reported of an experimental investigation of the operation of an electron gun at 0.0001—0.1 torr with beam currents up to a few dozen ma. A cylindrical 2.8-mm diameter cathode was coated with an oxide paste. The cathode-first-anode distance was 1 mm; the same distance between the first anode and the second anode. Beam electron energy, 0.5—1.5 kev; hydrogen atmosphere. Gun-collector distance, 30—40 cm. It was found that the ion space charge formed inside the gun (near the first anode) enhanced its fo... capability and caused overfocusing. To counteract the influence of the ...

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L 5091-66
ACCESSION NR: AP5020124

charge on the electron-optical characteristics of the gun, prevention of the appearance and accumulation of ions inside the gun is recommended. Shorter interelectrode spacings and shorter length of the entire gun are regarded as the best remedy. Orig. art. has: 2 figures.

ASSOCIATION: Kiyevskiy gosudarstvennyy universitet (Kiev State University)

SUBMITTED: 04May64 ENCL: 00 SUB CODE: EC

NO REF SOV: 004 OTHER: 000

Card 2/2

ANISKIN, L.; BARANCHUK, P.; KOROLEV, R.

Analysis of basic structural parameters of air-heating units for motor vehicles. Avt. transp. 43 no.8:13-17 Ag '65. (MIRA 18:9)

1. Chelyabinskiy politekhnicheskiy institut.

BARANCHUK, S.I.

ZYUZIN, V. I., SADOVSKIY, V. D., BARANCHUK, S. I.

The Effect of Alloying Elements on the Martensitic Point Condition, the Residual Austenite Quantity and its Disintegration in Tempering. Metallurgist 10-11, 75, 1939.

BARANCHUK, S.I.

ZYUZIN, V. I., SADOVSKIY, V. D., BARANCHUK, S. I.

The Effect of Alloying Elements on the Position of the Martensitic Point, the Quantity of Residual Austenite and its Stability during Tempering. Trudy UFAN 10, 119, 1941.

BARANCHUK, S.I.

SHTEYNBERG, S. S., BARANCHUK, C. I.

The Effect of the Crystallization and Forging Speed on the Sensitivity to Overheating of Steel Reduced by Aluminum and without Aluminum. Trudy UFAN 10, 181; 1941.

L 2080-65 EWT(d)/EWT(m)/EWP(q)/EWP(b) IJP(c)/AFMD(c)/ASD(d)/ASD(a)-5/ESD(dp)/
ACCESSION NR: AR4044246 ESD(gs)/ESD(t)/AEDC(a) S/0196/64/000/006/A013/A013
JD

SOURCE: Ref. zh. Elektrotekhnika i energetika, Abs. 6A100

22

AUTHOR: Baranchuk, Ye. I.

TITLE: Analysis of the stability of periodic conditions in circuits with steel

CITED SOURCE: Sb. dokl. Tashkentsk. politekhn. in-t, no. 3, 1963, 97-103

14

TOPIC TAGS: periodic condition stability, steel, periodic coefficient, circuit, nonlinearity, Fourier series, Lyapunov method, convergence, discontinuities

TRANSLATION: The stability of periodic conditions in circuits with steel is analyzed on the basis of the Lyapunov method. The periodic coefficients of the equations in the variations depend on nonlinearity. If nonlinear characteristics do not have discontinuities, then the periodic coefficients of the equations can be expanded into a harmonic Fourier series, the convergence of which depends on the number of derivatives of the nonlinear functions. In the equations in the variations, the signs of the real parts of the characteristic exponents coincide with the signs of the real parts of the roots of the characteristic equation with constant coefficients.

Card 1/2

L 2080-65

ACCESSION NR: AR4044246

which are obtained when the small parameters vanish. For circuits containing discontinuous nonlinearities there is used the method of Academician A. N. Krylov - a method of improving the convergence of Fourier series. In accordance with this method, nonlinearities are presented in the form of a sum consisting of a continuous and a discontinuous nonlinear function. Under periodic conditions, the former possess coefficients of the Fourier series which decrease very rapidly; the latter have coefficients which decrease slowly. Equations in variations of such nonlinearities contain the delta-function. Solution of these equations is sought in the form of an infinite series. Conditions of stability of the considered problems consist in the fact that the roots of the characteristic equation with coefficients that change abruptly during the period should for any moment of time lie in the left half-plane. Bibliography: 5 references.

SUB CODE: EC, MA ENCL: 00

Card 2/2

BARANCHUK, YE. I.

USSR/Electronics - Servo Systems Jun 53

"Electronic Devices for Stabilizing AC Servo Drives," Ye.I. Baranchuk, Cand Tech Sci, Leningrad

Elektrichestvo, No 6, pp 39-43

Proposes electronic devices to stabilize ac servo drives which contain phase-shifter and ac amplifiers. Exams their advantages over passive elec circuits and electromech apparatus. Exams influence of variations of carrier frequency, finds them negligible. Includes tables, diagrams. Submitted 11 Nov 52.

268T67

SOV/124-58-8-8419

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 8, p 11 (USSR)

AUTHOR: Baranchuk, Ye. I.

TITLE: On the Theory of Multidimensional Servo Systems (K teorii mnogomernykh sledyashchikh sistem)

PERIODICAL: Tr. 2-go Vses. soveshchaniya po teorii avtomaticheskogo regulirovaniya. Vol 1. Moscow-Leningrad, Izd-vo AN SSSR, 1955, pp 501-520

ABSTRACT: Certain theses based on frequency methods are evolved with respect to the theory of multidimensional servo systems. The author introduces the concept of the matrix amplitude-phase frequency characteristic and shows that when certain assumptions are fulfilled the problem of analyzing the qualitative performance indices of multidimensional servo systems reduces to applying the well-known frequency methods of qualitative analysis. An expression is evolved for determining the mean-square error of two-dimensional and three-dimensional servo systems from the known parameters of the systems and of the input signals.

Card 1/1 V. V. Solodovnikov

BARANCHUK, Ye.L., dots., kand. tekhn. nauk.

Analysing the stability of correlated linear controlled and servosystems. Trudy LVMI no.6:316-334 '57. (MIRA 11:5)
(Electronic control)

SOV/124-58-11-12120
Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 11, p 23 (USSR)

AUTHOR: Baranchuk, Ye. I.

TITLE: Designing Correction Circuits for Coupled-control Systems Subject to Slowly Changing Inputs (Sintez korrektiruyushchikh tsepey v sistemakh svyazannogo regulirovaniya pri medlenno izmenyayushchikhsya vozdeystviyakh)

PERIODICAL: Tr. Leningr. voyen.-mekhan. in-t, 1957, Nr 6, pp 335-348

ABSTRACT: The author examines a coupled-control system the links of which are linear systems, the connections between them being given. The author substantiates the possibility of designing such a system in accordance with prescribed qualitative performance indices by making use of the characteristics and equations obtained from an analysis of the forced motions of the system. An example is offered of the design of such a system subjected to slowly changing inputs.

Ye. N. Miroslavlev

Card 1/1

AUTHOR: Baranchuk, Yefim Isaakovich, Candidate of Technical Sciences, Docent SOV/ 161-58-1-21/33

TITLE: Investigation of Coupled Controlled and of Servo Systems Subject to Steady Arbitrary Fluctuations (Issledovaniye tochnosti svyazannykh reguliruyemykh i sledyashchikh sistem, nakhodyashchikhsya pod vozdeystviyem **statsionarnykh** sluchaynykh vozmushcheniy)

PERIODICAL: Nauchnyye doklady vysshey shkoly, Elektromekhanika i avtomatika, 1958, Nr 1, pp. 165 - 17o (USSR)

ABSTRACT: A complicated system composed of some servo-systems which are to be controlled is investigated. The individual systems are coupled by output deviation- and error signals that is to say the system as a whole is multi-cascade system (Ref 1). The control signals act upon the input of the individual systems whereas the fluctuations (disturbances) are applied to arbitrary members of the systems. A correlative dependence between all control and fluctuation effects is assumed to exist. A correlation matrix and a matrix of the spectral density can be set up (Refs 2,3). It is convenient to reduce all

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disturbances acting upon the individual systems to one input, that is to say, that input where the control signals are fed into the input of the system. The output deviations of each system and the pertinent errors are expressed by the equations (1). The correlation functions for the output deviations and errors are computed according to the method from reference 4. Formulae (2) and(3). The output deviations and errors are related to the control signals and disturbances by the matrix equations (4),(5),(6)and (7). When formulae (2) and (3) are used difficulties arise in the computation of the mean square deviation and of the output deviations. Simplified methods of computation are represented for 2 cases, which often occur in practice: 1) The systems of the coupled system are all equal. 2) The coupled system consists of individual systems of two types. A construction of characteristics by graphical and analytical means transforms insolvable problems into easily solvable ones. There are 2 figures and 4 references, which are Soviet.

Investigation of Coupled Controlled and of Servo Systems Subject to Steady Arbitrary Fluctuations

SOV/ 161-58-1-21/33

SUBMITTED: January 15, 1958

Card 3/3

BARANCHUK, Ye.I., kand.tekhn.nauk, dotsent

Stability and dynamic precision of electromechanical computers. Izv. vys. ucheb.zav.; prib. no.2:52-62 '58. (MIRA 11:6)

1.Leningradskiy voyenno-mekhanicheskiy institut.
(Electronic calculating machines)

28(1)

AUTHOR: Baranchuk, Yefim Isaakovich, Candidate of Technical Sciences, Docent of the Leningrad Institute of Mechanics

SOV/161-58-2-9/30

TITLE: Application of K. F. Gauss' Logarithms for Plotting the Logarithmic Frequency Characteristics of Multi-Circuit Control and Lag Systems (Primeneniye logarifmov K. F. Gaussa k postroyeniyu logarifmicheskikh chastotnykh kharakteristik mnogokonturnykh reguliruyemykh i sledyashchikh sistem)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Elektromekhanika i avtomatika, 1958, Nr 2, pp 68 - 74 (USSR)

ABSTRACT: To keep down the amount of calculations, curves are plotted on the base of K. F. Gauss' logarithms. These curves express the relation between the difference and the correction $\Sigma = f(R)$ for the logarithms of the sum of two numbers and between the difference and correction $\Delta = f(R)$ for the logarithms of the difference of two numbers. The construction of the logarithmic amplitude-frequency characteristics, by means of the curves, is shown. In more complicated cases,

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Application of K. F. Gauss' Logarithms for Plotting the Logarithmic Frequency Characteristics of Multi-Circuit, Control and Lag Systems SOV/161-58-2-9/30

in the make-up of the logarithmic amplitude-frequency characteristic of three or more single terms, a successive addition or subtraction of single pairs of characteristics is to be employed. As an example, the make-up of the logarithmic characteristics for the control system described in the article (Ref 3) is given. There are 8 figures and 3 references, 2 of which are Soviet.

ASSOCIATION: Leningradskiy mekhanicheskiy institut (Leningrad Institute of Mechanics)

SUBMITTED: March 4, 1958

Card 2/2

9(2,3) SOV/146-58-4-13/22

AUTHOR: Baranchuk, Ye.I., Candidate of Technical Sciences, Docent

TITLE: On the Theory of Electromechanical Differential Analyzers

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Priborostroyeniye, 1958, Nr 4, pp 76-86 (USSR)

ABSTRACT: The author considers in this paper simplified analysis methods of the dynamic accuracy and stability of electromechanical analyzers, solving systems of differential equations with non-random functions, in non-critical cases in the sense of A.M. Lyapunov. The application of servomechanisms as moment amplifiers and also small (parasite) parameters of the other amplifiers lead to higher orders of analyzer equations, compared to the equations to be solved and to dynamic errors, as well as possible unstability. This problem originated from their application in analog computers in connection with the creation of the electronic integrators of L.I. Gutenmakher and was considered in a number

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of papers of I.S. Gradshteyn [Ref 8]. In this paper, the problem is solved on the basis of constructional features of electromechanical analyzers by means of frequency methods. The canonical transformation used in this paper permits the determination of the influence of the deviation of any parameter on the errors of differential analyzers without any special difficulties. Finally, the author states that the methods explained in this paper may be effectively used for the analysis and the design of electronic differential analyzers. There are 5 diagrams and 11 references, 3 of which are English and 8 Soviet.

ASSOCIATION: Leningradskiy voyenno-mekhanicheskiy institut (Leningrad Military Institute of Mechanics)

SUBMITTED: February 27, 1958

~~28 (1)~~ /6,9500

AUTHOR: Baranchuk, Yefim Isaakovich, Candidate of Technical Sciences, Docent

SOV/161-59-1-16/25

TITLE: Application of Some Methods of the Linear Theory of Automatic Control in the Analysis of Absolute Stability of Nonlinear Systems to Be Controlled

PERIODICAL: Nauchnyye doklady vysshey shkoly. Elektromekhanika i avtomatika, 1959, Nr 1, pp 126-138 (USSR)

ABSTRACT: In the papers mentioned in references 1-5 the absolute stability of nonlinear systems to be controlled is investigated. In these papers quadratic forms of all variables are developed by various methods. The stability criteria are here obtained by investigating ratio of signs of the time derivatives of these forms. Thus, two problems arise: (1) It is necessary to have procedures at hand by which the parameters of controlled systems of any order controlled can be selected with a great number of nonlinear circuit elements which guarantee absolute stability of these systems. (2) Such nonlinear control systems must be planned with a certain qualitative index. In the work under review the problems are solved as follows: The frequency criterion by A. V. Mikhaylov is used as a criterion for positive

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or negative definiteness and indefiniteness respectively of quadratic forms. The possibility of investigating the fulfillment of the main criterion of the method by A. M. Lyapunov concerning the continuity of motion in noncritical cases with the criterion by A. V. Mikhaylov is shown up here. For this purpose the frequency characteristics of quadratic forms are applied. A frequency criterion is substituted for Sil'vestr's criteria, which allows to plot an amplitude-versus-phase characteristic. The behavior of the latter determines the character of the quadratic form and the conditions necessary for its transition from a form with a certain sign (znakoopredelennyy) into one with a constant and alternating sign, and vice versa. The frequency criterion for the definiteness of quadratic forms plays the same part in nonlinear systems to be controlled as does the frequency criterion by A. V. Mikhaylov in the case of linear systems to be controlled. The transition to this very frequency criterion allows to use the term of stability degree of nonlinear systems and to determine the stability range of these systems. Finally,

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Application of Some Methods of the Linear Theory of Automatic Control in the Analysis of Absolute Stability of Nonlinear Systems to Be Controlled SOV/161-59-1-16/25

the above procedure is illustrated by an example. The publication of this article was recommended by the institute mentioned in the "Association". There are 2 figures and 12 Soviet references.

ASSOCIATION: Leningradskiy mekhanicheskiy institut (Leningrad Mechanical Institute)

SUBMITTED: June 26, 1958

Card 3/3

BARANCHUK, Ye.I.

Synthesis of coupled control and servo systems in the presence of sationary random processes. Izv.vys.ucheb.zav.; radiofiz. 2 no.5:802-813 '59. (MIRA 13:5)
(Automatic control)

39339
S/146/62/005/004/008/013
D295/D308

16.8000

AUTHOR: Baranchuk, Ye.I.

TITLE: Determination of the periodic modes of operation in controlled systems with multi-valued non-linearities

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Priboro-stroyeniye, v. 5, no. 4, 1962, 47-53

TEXT: By replacing the non-linear terms in the differential equations of the controlled system by their first approximations for periodic modes of operations, i.e. by introducing suitable complex gains, the determination of the parameters of periodic modes reduces to finding the purely imaginary roots of the "characteristic" equation of a system of algebraic non-linear equations, the coefficients being in general complex quantities for multi-valued non-linearities. The condition for the existence of periodic modes can be found algebraically by equating to zero the resultant of two polynomials obtained from the "characteristic" equation, or by graphical means. Mikhailov's, Nyquist's and Gol'dfarb's methods can be used but it is

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essential to qualify them by taking account of the distinctive features of polynomials with complex coefficients. This is illustrated by the example of the self-oscillations of a relay type follow-up system the linear part of which is described by a third order differential equation and the relay has symmetrical characteristics with hysteresis and backlash (equivalent complex gain T). In the frequency plane the 1/T curve has two intersections with the transfer loci of the linear part (the locus must be plotted for both positive and negative frequencies), thus revealing two unrelated resonant frequencies. The method outlined is approximate and an investigation of stability by Liapunov's approach will be needed for a final assessment of the nature of steady-state oscillations. There are 3 figures.

ASSOCIATION: Leningradskiy mekhanicheskiy institut (Leningrad Mechanical Institute)

SUBMITTED: November 18, 1961

BARANCHUK, Ye.I.

Determining periodic conditions in controlled systems with ambiguous nonlinearities. Izv.vys.ucheb.zav.; prib. 5 no.4: 47-53 '62. (MIRA 15:9)

1. Leningradskiy mekhanicheskiy institut.
(Automatic control)

S/144/63/000/001/001/004
D230/D308

AUTHOR: Baranchuk, Ye.I., Candidate of Technical Sciences, Docent

TITLE: Determination of errors of analog computers in the solution of differential equations

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Elektromekhanika, no. 1, 1963, 25-34

TEXT: Fundamental generalized error equations are formulated in terms of all the variables of the machine and its computing channels. Various sources of error are discussed. For the solution of linear differential equations, the computer error expressions have linear form with variable coefficients. For the solution of certain non-linear differential equations, the deduced expressions have a non-linear form with constant or variable coefficients. An approximate method is developed on the basis of similarity between the error in analog computers and small external disturbances in coupled servomechanisms. The relevant formulas for approximate errors are given,

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solving both linear differential equations with constant and variable coefficients and the non-linear equations reduced to linear or almost linear form; these formulas are deduced from the system of non-linear expressions, for zero initial conditions. Separate formulas are derived for errors due to the following: inaccurate reproduction of the coefficients, inaccurate reproduction of the external perturbances, dynamic causes, zero drift and wrong initial conditions. The random error of computers can be determined using the root-mean-square method. A method for determining the scaling coefficients is given. The solution error of a system of equations with variable coefficients is discussed with particular reference to the computer ИПТ-5 (IPT-5). There are 5 figures.

ASSOCIATION: Leningradskiy mekhanicheskiy institut (Leningrad Mechanical Institute)

SUBMITTED: April 16, 1962

BARANCHUK, Ye.I.; ROMANOV, V.A., kand. tekhn. nauk, retsenzent; AREF'YEV, B.A., kand. fiz.-mat. nauk, red.; MITARCHUK, G.A., red. izd-va; SPERANSKAYA, O.V., tekhn. red.

[Design and adjustment of electronic controllers]Proektirovanie i nastroika elektronnykh reguliatorov. Moskva, Mashgiz, 1963. 370 p. (MIRA 16:3)
(Electronic control) (Electric controllers)
(Automatic control)

BARANCHUK, Yefim Isaakovich, kand.tekhn.nauk, dotsent

Determination of errors of electronic analog computers in solving systems of differential equations. Izv. vys. ucheb. zav.; elektromekh. 6 no.1:25-34 '63. (MIRA 16:5)

1. Leningradskiy mekhanicheskiy institut.
(Electronic analog computers) (Differential equations)

BARANCHUK, Ye.I.; KOVARSKAYA, Ye.L.

Moment of a biphase asynchronous motor controlled by amplitude modulated voltage. Izv. vys. uchab. zav.; prib. 6 no.5: 41-50 '63. (MIRA 16:11)

1. Leningradskiy mekhanicheskiy institut.

BARANCHUK, Yefim Isaakovich, kand. tekhn. nauk, dotsent; KOVARSKAYA, Yevgeniya Livovna

Characteristics of two-phase asynchronous motors with a magnetic amplifier feed. Izv. vys. ucheb. zav.; elektromekh. 6 no.10: 1230-1234 '63. (MIRA 17:1)

1. Leningradskiy mekhanicheskiy institut (for Baranchuk).

ACCESSION NR: AP4041646 S/0146/64/007/003/0025/0032

AUTHOR: Baranchuk, Ye. I.; Kovarskaya, Ye. L.

TITLE: Application of a method of slow-varying amplitudes to an investigation of a-c servo systems

SOURCE: IVUZ. Priborostroyeniye, v. 7, no. 3, 1964, 25-32

TOPIC TAGS: servo, ac servo, transfer function, ac servo transfer function

ABSTRACT: A method for determing the transfer functions of a-c servo systems by envelope transforms is developed. The differential equations of the envelopes of AM signals serve as fundamental equations of the servo system. These advantages of the method are claimed: (1) no periodic coefficients in the equations; (2) the simplification of the equations is well substantiated; (3) the differential equations are reduced to linear or linearized equations with constant coefficients. The equations are set up for an a-c system comprising a 2-phase

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ACCESSION NR: AP4041646

hollow-rotor induction motor, two modulators, carrier-frequency stabilizing circuits, and an inertial amplifier. The formula developed for the transfer function of the system is: $k(p) = \frac{\theta_{вых}(p)}{\theta_{вх}(p)} = \frac{a_M W_1(p) + b_M W_2(p)}{1 + a_M W_1(p) + b_M W_2(p)}$; for the transfer function of the error signal: $k_\varepsilon(p) = \frac{\varepsilon(p)}{\theta_{вх}(p)} = \frac{1}{1 + a_M W_1(p) + b_M W_2(p)}$. Stability conditions for the case of supplying the motor control winding from a transistorized power amplifier are determined; the effect of the amplifier internal impedance and other system parameters is studied. Application of the method is illustrated by an example with an ADP-123B motor. Orig. art. has: 2 figures and 20 formulas.

ASSOCIATION: Leningradskiy mekhanicheskiy institut (Leningrad Mechanical Institute)

SUBMITTED: 15May63 ENCL: 00

SUB CODE: IE NO REF SOV: 008 OTHER: 001

Card 2/2

L 58734-65 EED-2/EWT(d)/EWP(l) Pg-4/Pk-4/Po-4/P[illegible]-4 IJP(c) GG/BB

ACCESSION NR: AR5002393 S/0271/64/000/010/B003/B004 681.142.33.1

SOURCE: Ref. zh. Avtomat., telemekh. i vychisl. tekhn. Sv. t., Abs. 10B17

AUTHOR: Baranchuk, Ye. I.

TITLE: Theory of analog-computer errors

CITED SOURCE: Sb. tr. Leningr. mekhan. in-ta, no. 37, 1964, 37-47

TOPIC TAGS: analog computer, analog computer error

TRANSLATION: Methods of setting up the fundamental error equations describing a simulator of ordinary differential equations are considered. In order to analyze the errors arising with the solution of linear ordinary differential equations, new equations are derived from the fundamental equation for the purpose of finding the error components inherent to the simulator. To allow for nonlinear-converter errors, an error equation is suggested which uses maximum errors of the functional converters. For approximate determination of the errors, the simulator solution is to be used neglecting the components caused by the [illegible] solution being analyzed. Bibliography: 15 titles.

SUB CODE: MP ENCL: 00

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BARANCHUKOVA, I.M.

Errors in the shape in machining on automatic single-spindle turret latches. Stan.i instr. 35 no.9:16-18 S '64. (MIRA 17:10)

RUCKA, Aurelia; BARANCZAK, Jan

Congenital developmental defects of the stomach and of the duodenum with special reference to double deformity. Pat. polska 7 no.1:69-75 Jan-Mar 56.

1. Z Zakladu Anatomii Pat. A. M. w Poznaniu Kier.: prof dr. med J. Groniowski Poznan, Kozia 9, Zaklad Anat. Patol. A. M.

(STOMACH, abnormalities,
duplication. (Pol))
(DUODENUM, abnormalities,
aberrant duodenal tissue. (Pol))
(ABNORMALITIES,
aberrant duodenal tissue & double stomach. (Pol))

BARANCZAK J.

EXCERPTA MEDICA Sec 5 Vol 12/3 Gen. Path. Mar 59

764. VASCULAR ANASTOMOSES IN THE LUNGS IN A CASE OF CONGENITAL HEART DEFECT - Ujawnione zespolenia naczyniowe w płucach w przypadku wrodzonej wady serca - Barańczak J. Zakł. Anat. Patol. Akad. Med., Poznań - PAT. POL. 1958, 9/2 (183-189) Illus. 6

In a 26-year-old woman who died after ligature of a patent ductus arteriosus, microscopic examination of the lungs showed numerous blocking arteries with a fibrotic tunica media and a hyalinized tunica intima, with traces of old thrombi on the endothelium. These changes should be connected with the high pressure in the right heart and in the pulmonary artery.

STADNICKI, Jerzy; BARANCZAK, Zofia

Studies on the expediency of fresh, frozen and lyophilized bone grafts transplanted into muscular tissue in the reconstructive surgery of the jaw and face. Czas. stomat. 18 no.8/9:1049-1054 Ag-S '65.

1. Z Oddzialu Szczekowego Kliniki Chirurgii Stomatologicznej AM w Poznaniu (Kierownik: prof. dr. J. Stadnicki).

BARANCZAK, Zofia

Histological and clinical evaluation of bone grafts used in the reconstruction of mandibular defects. Czas. stomat. 18 no.8/9:1055-1060 Ag-S '65.

1. Z Oddzialu Szczekowego Kliniki Chirurgii Stomatologicznej AM w Poznaniu (Kierownik: prof. dr. J. Stadnicki).

BARANCZAK, Zofia

ADAMSKI, Jan; BARANCZAK, Zofia; DOBEK, Jaoann; KRAJNIK, Joanna; ZIOLKIEWICZ, Tadeusz

Conservative penicillin and streptomycin therapy based on bacteriological studies in cervicofacial actinomycosis. Czasopismo stomat. 7 no.8:320-328 Aug 54.

1. Z Zakladu Chirurgii Stomatologicznej Akademii Medycznej w Poznaniu. Kierownik: prof. dr L.Lakner. Z Zakladu Mikrobiologii akademii Medycznej w Poznaniu. Kierownik: prof. dr J.Adamski.

(ACTINOMYCOSIS,
cervicofacial, ther., penicillin & streptomycin)
(FACE, diseases,
actinomycosis, ther., penicillin & streptomycin)
(PENICILLIN, therapeutic use,
actinomycosis, cervicofacial, with streptomycin)
(STREPTOMYCIN, therapeutic use,
actinomycosis, cervicofacial, with penicillin)
(NECK, diseases,
actinomycosis, ther., penicillin & streptomycin)

BARANCZAK, ZOFIA

ADAMSKI, Jan; BARANCZAK, Zofia; DOBEK, Maria; KRAJNIK, Joanna, ZIOLKIEWICZ, Tadeusz.

Conservative treatment of cervicofacial actinomycosis with para-aminosalicylic acid and isonicotinic acid hydrazid based on bacteriological findings. Czas. stomat. 8 no.2:61-67 Feb '55.

1. Z Zakladu Chirurgii Stomatologicznej A.M. w Poznaniu. Kierownik: prof.dr L. Lakner; i z Zakladu Mikrobiologii A.M. w Poznaniu, Kierownik: prof.dr J. Adamski Poznan, ul. Swiecickiego Nr.4 I pietro.

(ACTINOMYCOSIS
cervicofacial, ther.isoniazid & PAS, indic.)
(NICOTINIC ACIDISOMERS, ther.use
isoniazid in cervicofacial actinomycosis)
(PARA-AMINOSALICYLIC ACID, ther.use
actinomycosis, cervicofacial)
(FACE, diseases
actinomycosis, cervicofacial, ther.isoniazid & PAS)
(NECK, diseases
actinomycosis, cervicofacial, ther.isoniazid & PAS)

BARANCZUK, Henryk

Products of the Cable Accessories Works in Elk. Wiad elektrotechn 28 no.5:138-139 My '61.

BARANDEYEV, K.B.; SHTAMBERGER, G.A.

Circuits for measuring active components of impedance. Izm. tekh. no.1:53-55 Ja-F '58. (MIRA 11:2)
(Electronic measurements)

BARANDYCH, T. V.

Proizvodstvo kazeinovogo kleya (Production of casein glue, by) T. V. Barandych i P. D. Mernenko. Moskva, Pishchepromizdat, 1953.
38 p. illus, diagrs.

SO: N/5
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BARANEK, A., mgr inz.

Automation of heating passenger cars. Przegl kolej mechan 13 no.4:120-126 Ap '61.

BARANEK, Alfons, mgr inz.; GANDZIAREK, Miroslaw, mgr inz.

Railroad rolling stock at the 30th International Poznan Fair.
Przegl kolej mechan 13 no.7:193-196 Jl '61.

RARANEK, Alfons, mgr inz.; GANDZIAREK, Miroslaw, mgr inz.

Development of railroad engineering as shown at the 30th International Poznan Fair. Przegl kolej mechan 13 no.8:225-227 Ag '61.

BARANEK, A.

Organization of the management of exchangeable parts of railroad rolling stock. Przegl kolej mechan 11 [i.e. 16] no.3:76, 85-89 Mr '64.

1. Central Designing Office, Poznan.

36818
S/137/62/000/004/179/201
A154/A101

1.2310

AUTHOR: Baranek, A.

TITLE: Ultrasonic welding

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 4, 1962, 70, abstract 4E394 ("Przegl. kolejowy mechan.", 1961, 13, No. 9, 262 - 264, Polish)

TEXT: Ultrasonic welding is based on mashing the objects to be joined and at the same time applying ultrasonic vibrations with a frequency of ~22 kHz and an amplitude of up to 0.1 mm. The ultrasonic welding unit consists of a TBCh (TVCh) generator, an ultrasonic oscillator and a vibrator transmitting the ultrasonic vibrations to the parts to be joined. Spot ultrasonic welding is performed on a fixed support, seam ultrasonic welding on a rotating support. Ultrasonic welding is used for joining thin metal parts (foil up to 5 μ thick, wire, sheets) to parts of any thickness. Ultrasonic welding of Al gives the best results (ultrasonic welding of a 2 - 5 mm thick sheet is possible with a 4-kw generator). Diagrams of joints made by ultrasonic welding are given, and cold ultrasonic soldering with the use of an intermediate aluminum plate is mentioned. A diagram

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Ultrasonic welding..

illustrating the possibility of ultrasonically welding various metals is given. Investigations led to the following conclusions: for ultrasonic welding the amplitude of the ultrasonic oscillations should be at least 10 μ; strength of the weld rises to its optimum value in connection with increase of the amplitude of the ultrasonic oscillations the more rapidly the greater is the mashing force; the two latter parameters have optimum values for a given thickness and type of material; depending on the thickness, ultrasonic welding takes from 0.05 to 2 sec, and does not change the chemical composition, structure and form of the joined elements.

A. Korovin

[Abstracter's note: Complete translation]

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BARANEK, A., mgr inz.

Increasing the durability of the friction elements of the railroad rolling stock by surface hardening. Przegl kolej mechan 13 no.11:338-340 N '61.

S/284/63/000/003/002/004
A004/A126

AUTHOR: Baranek, A.

TITLE: Machine tool novelties at the 23rd International Fair at Poznań

PERIODICAL: Referativnyy zhurnal, 35. Voprosy tekhnicheskogo progressa i organizatsii proizvodstva v mashinostroyenii, no. 3, 1963, 5 - 6, abstract 3.35.31 (Przegl. kolejowy mechan., 1962, v. 14, no. 8, 229 - 233, Polish)

TEXT: Three main groups of machine tools were exhibited at the Poznań Fair: multipurpose, heavy (for heavy mechanical engineering and railroad transportation) and automatic machine tools. The following types were noted: Model TVC 50 compact lathe with hydraulic saddle manufactured by a Vrotslav plant; Model TGC 25 copying milling machine with electronic control and electrospark stylus manufactured by the Prushkov Plant im. 1 May; Model TOA-40 lathe for the machining of axles, fitted with a hydraulic copying equipment according to flat templets, manufactured by the Porenbskiy Plant; Model KKA-125 vertical boring and turning lathe with program control for the automatic machining of railroad car axles. The following automated machine tools were of special interest: Model BP-V20 longitudinal turning auto-

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